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Cytotoxic activity of the root extracts of *Petroedmondia syriaca* (Boiss.) Tamamsch

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The isolated and purified 12 coumarins from the roots of the plant were identified as 3'-isobutyryloxymarmesin acetate, 3'- α -angeloyloxydeltoin, smyrioidin, deltoin, marmesin acetate, scoparone, bergapten, psoralen, colladonin, 14'-Acetoxybadrakemin, marmesin and 14'-hydroxybadrakemin using their physical and spectral characteristics, three compounds of them were isolated for the first time in this study. The extracts (hexane, CH₂Cl₂ etc.) were evaluated for cytotoxicity by the MTT method using MCF-7 cell line. The cytotoxic activity of the compounds was obtained and the coumarin mixture were investigated and the cytotoxic activity was found to be significant. This is the first report on the chemical composition and cytotoxic activity of the roots *P. syriaca*. The cytotoxic activity of the coumarin mixture was found to be significant. The highest activity was found in the petroleum ether and dichloromethane extracts. In order to identify their cytotoxic compounds, petroleum ether and dichloromethane extracts were subjected to a series of chromatographic separations. Structures of the purified compounds were elucidated by spectroscopic methods, chemical transformations and direct comparison with the authentic standards and they were available as scoparone (1), psoralen (2), bergapten (3), marmesin (4), marmesinacetate (5), deltoin (6), smyrioidin (7), 4'-acetyl-3'- isobutyryloxymarmesin (8), colladonin (9) and 14- acetoxybadrakemin (10). Petroleum ether and dichloromethane extracts of *Petroedmondia syriaca* (Boiss.) Tamamsch showed cytotoxic activity on MCF-7 cell lines at 25 μ g/mL and higher concentrations (Figures 1&2). This is the first report on the chemical composition and cytotoxic activity of the roots of *P. syriaca*. The

cytotoxic activity testing of the isolated compounds is currently in progress. Cytotoxic activity of colladonin has recently been reported.

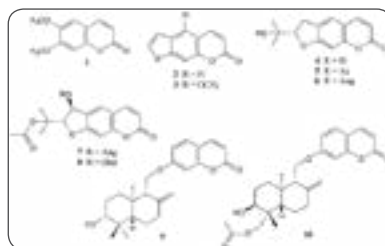
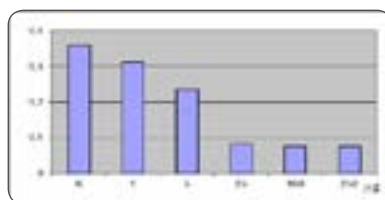
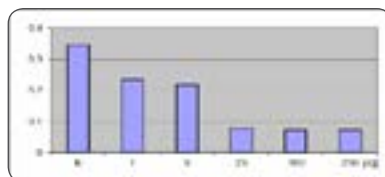


Figure 1:

Figure 2: Cytotoxic activity of the petroleum ether extract of *P. syriaca*Figure 3: Cytotoxic activity of the dichloromethane extract of *P. syriaca*

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Recent Publications

1. Tosun F, Akalgan D and Ve Miski M (2017) Cytotoxic coumarins from the roots of *Petroedmondia syriaca* (Boiss.) Tamamsch. 2nd International Gazi Pharma Symposium Series (GPSS-2017), 11-13th October, Ankara.
2. Tosun F, Akalgan D and ve Miski M (2017) Effects of the root extracts of *Petroedmondia syriaca* (Boiss.) Tamamsch. on the colon cancer cells, IX. Apiales Symposium, 31st July-2nd August 2017, Guangzhou-China.
3. Tosun, F., Akalgan, D., ve Miski, M. (2016). Cytotoxic activity of the root extracts of *Petroedmondia syriaca* (Boiss.) Tamamsch. The 29th International Symposium on the Chemistry of Natural Products (ISCP-29) and the 9th International Conference on Biodiversity (ICOB-9), Sept. 24th- 27th, Izmir-Turkey.
4. Orhan I E, Tosun F, Gülpınar A R, Kartal M, Duran A, Mihoglugil F and Ve Akalgan D (2015) LC-MS quantification of parthenolide and cholinesterase inhibitory potential of selected *Tanacetum L.* (Emend. Briq.) taxa. *Phytochemistry Letters* 11:347-352

Biography

Demet Akalgan has obtained PhD on Pharmacognosy, Pharmacognosy researches on *Petroedmondia syriaca* (Boiss.) Tamamsch and Master of Science in Phytotherapy. She has 16 years of experience at Ministry of Health on Regulatory Affairs and Regulations of Medical Devices, Medicinal Products, Clinical Trials and Cosmetics. She has various certifications and trainings on European Union structure and ICH Guidelines (GMP, GDP and GCP). She is the Head of Pharmacognosy Department, Faculty of Pharmacy and Lecturing on Pharmacognosy at Girne American University. She has publications on breast cancer and migraine. She provides scientific support and consultation to private industry.